

WHAT IS CLAIMED IS:

1. An error rate counting system for providing information on the periodicity of errors occurring in an optical compact disk system used for reading data from an optical disk media, comprising:

an error detector to identify the occurrence of at least one error type in a stream of multiplexed error signals;

at least one error rate counter corresponding to the at least one error type, the at least one error rate counter incremented responsive to the occurrence of at least one error type and upon the presence of a first clocking signal;

at least one error rate count register coupled to the at least one error rate counter, the at least one error rate count register generating an average error rate upon the occurrence of a second clocking signal, the average error rate being proportional to a timing characteristic of the second clocking signal.

2. The error rate counting system as in claim 1, further comprising a clock counter to receive a third clocking signal, the clock counter outputting the second clocking signal upon the occurrence of a predetermined number of third clocking signals.

3. The error rate counting system as in claim 1, further comprising a reset signal received by the at least one error rate count register to periodically reset the at least one error rate count register.

4. The error rate counting system as in claim 1, wherein at least a portion of the stream of multiplexed error data is derived from a Cross-Interleaved Reed-Solomon Code.

5. The error counting system as in claim 1, wherein the at least one error type is

derived from C1 error detection.

6. The error counting system as in claim 1, wherein the at least one error type is derived from C2 error detection.

7. The error rate counting system as in claim 1, further comprising:

5 at least one threshold rate register storing a predetermined threshold rate value;  
and

at least one comparator coupled to the at least one error rate count register and the at least one threshold rate register, the at least one comparator performing a comparison and outputting at least one interrupt signal upon the at least one error rate count exceeding the predetermined threshold rate value, the at least one interrupt  
10 signal altering predetermined operations performed by the optical compact disk system.

8. An error rate counting system for providing information on the periodicity of ✓  
15 errors occurring in an optical compact disk system used for reading data from an optical disk media, comprising:

an error detector to identify the occurrence of an error type in a stream of multiplexed error data derived from a Cross-Interleaved Reed-Solomon Code;

an error rate counter corresponding to the error type, the error rate  
20 counter incremented responsive to the occurrence of the error type and upon the presence of a first clocking signal;

a clock counter to receive a second clocking signal, the clock counter outputting the third clocking signal upon the occurrence of a predetermined number of second clocking signals; and

25 an error rate count register coupled to the error rate counter, the error rate count register generating an average error rate upon the occurrence of the third clocking signal, the average error rate being proportional to a timing characteristic of the third clocking signal.

30 9. The error rate counting system as in claim 8, further comprising:

a threshold rate register storing a predetermined threshold rate value;

a comparator coupled to the error rate count register and the threshold rate register, the comparator performing a comparison and outputting an interrupt signal upon the error rate count exceeding the predetermined threshold rate value, the interrupt signal altering predetermined operations performed by the optical compact disk system.

10. A method for providing information on error rates occurring in an optical compact disk unit used for reading data from an optical disk media, comprising the steps of:

- 10 receiving a stream of multiplexed error flag signals containing ✓  
information corresponding to at least one error detection scheme;  
detecting the occurrence of at least one error type in the stream of ✓  
multiplexed error flag signals;  
counting at least one error rate for the at least one error type over a ✓  
15 predetermined time period; and  
storing at least one error rate count. ✓

11. The method of claim 10, wherein the predetermined time period is derived from a time necessary to read a predetermined amount of data from the optical ✓ how  
20 compact disk unit.

12. The method of claim 10, further comprising the step of identifying the at least one error type from a set of error types.

25 13. The method of claim 10, further comprising the step of periodically resetting the at least one error rate.

14. The method of claim 10, wherein at least a portion of the multiplexed error flag signals is derived from a Cross-Interleaved Reed-Solomon Code.

30 15. The method of claim 10, wherein the at least one error type is derived from C1 error detection.

16. The method of claim 10, wherein the at least one error type is derived from C2 error detection.

17. The method of claim 10, further comprising the steps of:

- 5 storing at least one preset threshold rate value;  
comparing the at least one error rate to the at least one threshold rate  
value;  
generating at least one interrupt signal upon the at least one error rate  
count exceeding at least one preset threshold value; and  
10 altering selected operations performed by the optical compact disk unit.

